UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/699,486	10/31/2003	Eric Anderson	200207252-1	3149

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HEWLETT PACKARD COMPANY
P O BOX 272400, 3404 E. HARMONY ROAD
INTELLECTUAL PROPERTY ADMINISTRATION
FORT COLLINS, CO 80527-2400

EXAMINER
RADTKE, MARK A

ART UNIT	PAPER NUMBER
2165	

DATE MAILED: 05/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 December 2004*.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-24* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *31 October 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some *   c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1.   The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2.   Claim 15 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The specification does not explain how to implement an "isolation level" or a command to "change root directory".

Claim Rejections - 35 USC § 102

3.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4.   Claims 1-15 and 17-24 are rejected under 35 U.S.C. 102(e) as being anticipated

by Verma et al. (US Patent 6,856,993).

        As to claim 1, Verma et al. teaches a method of creating a filesystem with

transaction based functionality (see Abstract), comprising:

        receiving an indicator to initiate a transaction for files stored in one or more

portions of the filesystem (see column 10, lines 8-10, "mark the thread/process as

transacted" and column 10, lines 20-24, "copyFile");

        duplicating the one or more portions of the filesystem within a pseudo-filesystem

(see column 10, lines 8-24, "copyFile"); and

        creating a control text file that receives text-based commands to operate on the

pseudo-filesystem (See figure 4, element 86 and column 33, lines 46-56. In the

computer programming art, "log" files are implicitly "text-based". See also column 7,

lines 24-27, "of a database component" and column 2, line 1. SQL also uses plain-text

commands to save data, and is explicitly mentioned as a useful aspect of the invention).

        As to claim 2, Verma et al. teaches wherein the duplicating is performed lazily

(see column 2, lines 59-65 and column 23, "Deferred Redo Alternative").

        As to claim 3, Verma et al. teaches further comprising:

        processing the text-based commands written to the control file (see column 2,

lines 57-59 and column 3, lines 3-6);

operating on the one or more portions of the pseudo-filesystem within a

transaction according to the text-based commands (see column 3, lines 3-6).

As to claim 4, Verma et al. teaches further comprising:

completing the transaction upon receipt of a text-based command associated

with terminating the transaction (see column 8, lines 26-28).

As to claim 5, Verma et al. teaches wherein the text-based commands include

functional equivalent commands associated with terminating the transaction (see

column 7, lines 23-26, "aborted") and selected from a set of commands for performing

one of the following functions: delete directory (see column 17, lines 3-7), delete

filesystem (see column 17, lines 3-7, "recursive delete"), and abort (see column 7, lines

23-26).

As to claim 6, Verma et al. teaches further comprising:

updating the filesystem with the updates performed on the pseudo-filesystem

when the transaction has completed (see column 8, lines 26-28).

As to claim 7, Verma et al. teaches wherein the updates are performed upon

receipt of an indication to commit the transaction (see column 8, lines 26-28).

As to claim 8, Verma et al. teaches further comprising:

creating a status text file that provides text-based status results from operations

performed on the pseudo-filesystem (see column 2, lines 57-59, "actual data write

details of the transaction").

As to claim 9, <u>Verma et al.</u> teaches wherein the indicator to initiate the

transaction results from the creation of a directory within a pseudo-filesystem (see

column 27, lines 64-67).

As to claim 10, <u>Verma et al.</u> teaches wherein the transaction ensures atomic

updates to the filesystem in accordance with modifications made to the pseudo-

filesystem and related files during the transaction (see column 6, lines 24-26).

As to claims 11 and 18, <u>Verma et al.</u> teaches wherein a user assists in

reconciliation of conflicts between updates in the pseudo-filesystems (See column 29,

lines 37-45. Depending on when the non-transacted user releases the resource, a file

handle in conflict will not be deleted, thus resolving a resource conflict).

As to claim 12, <u>Verma et al.</u> teaches a method of interfacing with a filesystem

(see Abstract) comprising:

receiving a text-based command in a command file for operating on a pseudo-

filesystem corresponding to the filesystem within a transaction (see column 10, lines 8-

10 and column 10, lines 20-24);

determining whether one or more data dependencies would prevent the text-based command from being performed on the pseudo-filesystem (see column 29, lines 37-45); and

performing the text-based command and potentially updating the pseudo-filesystem, the filesystem and one or more corresponding files associated with the pseudo-filesystem and filesystem respectively (see column 29, lines 37-45).

As to claim 13, Verma et al. teaches further comprising:

updating a status file associated with the pseudo-filesystem with text-based intermediate status results for performing the text-based command and updates performed in the system (see column 2, lines 57-59, "actual data write details of the transaction").

As to claim 14, Verma et al. teaches further comprising:

updating a status file associated with the pseudo-filesystem with text-based results indicating the final status associated with the command (see column 2, lines 57-59, "actual data write details of the transaction").

As to claim 15, Verma et al. teaches wherein receiving a text-based command includes functional equivalent commands selected from a set including: change root directory (The "mount" command is all well-known command in NTFS. Mount points can be partitions or folders within an existing partition. See

http://support.microsoft.com/?kbid=205524), select concurrency control type (See

column 6, lines 56-59. Any kind of concurrency control system can be used via

interfaces), select isolation level (See column 6, lines 48-51. Processes, file handles or

files must be selected before they are treated as transactional operations. Disabling or

enabling transactions is a selection of isolation level.), commit transaction (see column

8, lines 26-28), and abort transaction (see column 7, lines 23-26).

As to claim 17, Verma et al. teaches wherein determining the one or more data

dependencies includes using lock-based concurrency control (LBCC) to control pending

read and write operations to the pseudo-filesystem, the filesystem and one or more

corresponding files associated with the pseudo-filesystem and filesystem respectively

(see column 11, line 49 – column 12, line 18).

As to claim 19, Verma et al. teaches a computer program product for creating a

filesystem with transaction based functionality, tangibly stored on a computer-readable

medium, comprising instructions operable to cause a programmable processor (see

Abstract) to:

For the remaining steps of this claim applicant(s) is/are directed to the remarks

and discussions made in claim 1 above.

As to claim 20, <u>Verma et al.</u> teaches a computer program product for interfacing with a filesystem, tangibly stored on a computer-readable medium, comprising instructions operable to cause a programmable processor (see Abstract) to:

For the remaining steps of this claim applicant(s) is/are directed to the remarks and discussions made in claim 12 above.

As to claim 21, <u>Verma et al.</u> teaches an apparatus that creates a filesystem with transaction based functionality (see Abstract) comprising:

a processor (see figure 1, element 21);

a memory (see figure 1, element 25) having instructions capable of being executed on the processor that receive an indicator to initiate a transaction for files stored in one or more portions of the filesystem (see column 10, lines 8-10 and column 10, lines 20-24), duplicate the one or more portions of the filesystem within a pseudo-filesystem (see column 10, lines 8-24, "copyFile"), and create a control file that receives text-based commands to operate on the pseudo-filesystem (See figure 4, element 86 and column 33, lines 46-56. In the computer programming art, "log" files are implicitly "text-based").

As to claim 22, <u>Verma et al.</u> teaches an apparatus that interfaces with a filesystem (see Abstract), comprising:

a processor (see figure 1, element 21);

a memory (see figure 1, element 25) having instructions capable of being
executed on the processor that receive a text-based command in a command file for
operating on a pseudo-filesystem corresponding to the filesystem within a transaction
(see column 10, lines 8-10 and column 10, lines 20-24), determine whether one or more
data dependencies would prevent the text-based command from being performed on
the pseudo-filesystem (see column 7, lines 23-26, "aborted"), and perform the text-
based command and potentially updating the pseudo-filesystem, the filesystem and one
or more corresponding files associated with the pseudo-filesystem and filesystem
respectively (see column 8, lines 26-28).

As to claim 23, Verma et al. teaches an apparatus for creating a filesystem with
transaction based functionality (see Abstract), comprising:

For the remaining steps of this claim applicant(s) is/are directed to the remarks
and discussions made in claim 1 above.

As to claim 24, Verma et al. teaches an apparatus for interfacing with a
filesystem (see Abstract), comprising:

For the remaining steps of this claim applicant(s) is/are directed to the remarks
and discussions made in claim 12 above.

Claim Rejections - 35 USC § 103

5.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

6.   Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Verma

et al. as applied to claim 12 above, and further in view of Kung et al. ("On optimistic

methods for concurrency control", ACM Transactions on Database Systems (TODS),

vol. 6, issue 2, pages 213-226. Published June 1981).

        As to claim 16, Verma et al. does not teach wherein determining the one or more

data dependencies includes using optimistic concurrency control (OCC) to control

pending read and write operations to the pseudo-filesystem, the filesystem and one or

more corresponding files associated with the pseudo-filesystem and filesystem

respectively.

        Kung et al. teaches wherein determining the one or more data dependencies

includes using optimistic concurrency control (OCC) to control pending read and write

operations to the pseudo-filesystem, the filesystem and one or more corresponding files

associated with the pseudo-filesystem and filesystem respectively (see Abstract).

        Therefore, it would have been obvious to one of ordinary skill in the relevant art

at the time the invention was made to have modified Verma et al. by the teaching of

Kung et al. for the benefit of providing an external transaction service (See Verma et al.,

column 6, lines 59-64, where one type of transaction service, MS-DTC, is suggested.

Furthermore, Examiner notes that there are 171 citations listed on the ACM Portal,

indicating that the method is well-known in the art).

Additional References

7.   The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure.

The following patents are cited to further show the state of art with respect to

transactional file systems and NTFS in general:

Patent/Pub. No.	Issued to	Cited for teaching
US 5515502 A	Wood; Timothy E.	Transactional file system
US 5835764 A	Platt; Michael et al.	Transactional file system
US 5890161 A	Helland; Patrick James et al.	Transactional file system
US 5832508 A	Sherman; Andrew P. et al.	Transactional file system log file
US 6108759 A	Orcutt; Niel et al.	Partion creation, NTFS conversion
US 6185575 B1	Orcutt; Niel	File deletion
US 6377958 B1	Orcutt; Niel	File deletion
US 20050132179 A1	Glaum, Jeffery D. et al.	Atomic instructions

Conclusion

8.   Any inquiry concerning this communication or earlier communications should be

directed to the examiner, Mark A. Radtke. The examiner's telephone number is (571)
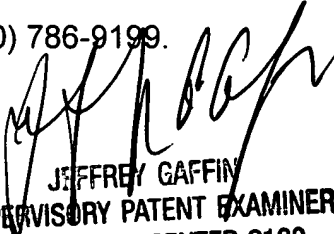
272-7163, and the examiner can normally be reached between 9 AM and 5 PM,

Monday through Friday.

If attempts to contact the examiner are unsuccessful, the examiner's supervisor,

Jeffrey Gaffin, can be reached at (571) 272-4146.

Any inquiry of a general nature or relating to the status of this application or

proceeding should be directed to Customer Service at (800) 786-9199.

JEFFREY GAFFIN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100

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9 May 2006